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ABSTRACT

The effects of training on twenty-one teachers in a Teacher Corps school were examined according to the type of training chosen, the preference exhibited by the teacher for certain types of delivery systems, and the level of transfer to classroom practice which were applicable to the different systems. This four-year study of inservice teacher education involved the correlation of personality measures for each teacher with a frame of reference developed by Abraham Maslow to describe individual needs patterns. Specific patterns emerged in the preference and use of training methods. Nearly all the teachers were able to replicate the training activities in their classrooms, but actual use of the learned strategies was a completely different matter. Those teachers at the self-actualizing end of Maslow's scale were able to implement and incorporate much of the training into their natural styles. Those at the middle level on the scale generally used only those things that helped them to "fine-tune" their current practices. Those at the lower end of the scale showed no consistent pattern of choice but were consistently unable to transfer activities into practice. (Author/LH)

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AN ANALYSIS OF STAFF DEVELOPMENT AND ITS EFFECTS ON CLASSROOM PRACTICE

The South Bay Project

Michael D. McKibbin
Bruce R. Joyce

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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INTRODUCTION

Staff development must fill three needs, needs which at first may seem different but which actually have much in common. One is the societal need to create an educational system which can regenerate itself continuously so that it can more effectively and humanely create environments within which all children can flourish. The second need arises from within each school, whose faculties and communities need to find ways to improve their environments so as to nurture the personal, social, and academic potential of the young people in their neighborhoods. The third arises from the necessity for the individual professional to live a satisfying and stimulating personal and professional life--to become the kinds of people who, through the example of vital and committed personal lives can help children to develop optimism, confidence, knowledge, and values to engage in the quest to fulfill their own potential and join with their neighbors to bring about a better world for everyone. The first need emphasizes the society, which needs to be insured that there is an effective, continuing education system for teachers and other education personnel. The second emphasizes the school, whose faculties and communities need to be engaged in the continuous study of their educational programs and ways of improving them. The third emphasizes teachers as people and stresses the necessity to create environments within which educators can flourish and reach out to develop their best potential. This paper will primarily examine the third need, the teacher as an individual.

For the last four years we have been studying the lives of twenty-one teachers in one school. During that time this school has been the site of an extensive and well-funded staff development project. A considerable effort has been made to study the children and to generate a large variety of opportunities for growth on the part of community members, the administrative staff and the teachers. During the course of this project the staff has generated opportunities of planned variation in the major dimensions of staff development: governance--the decisions and choices that are made and who makes them; substance--what is learned and how it is learned, delivery--the incentives and interfaces between trainers. trainees, training and staff; and the modes--types of training.

This paper will focus on two areas--first which staff development activities South Bay teachers participate in and how they use these activities in their classrooms, and second, how an individual teacher's personality and needs function as a determinant of reaction to training.

SETTING

The setting is a school in which there has been a very well-funded and staffed inservice program. It was in its fourth year at the time of the study. The program is operated by a "policy board" which includes teachers, community members, representatives of a nearby university, and a half dozen full or part-time on-site personnel. The resources for the single school are extensive and some of the components of the program have become well established. In addition to being involved in governance parents have been recruited as aides and offered training in tutoring of the basic subjects. Teachers and parents have been offered guidance and counseling together, and family counseling services have been offered to those wishing it. Observer/counselors visit classrooms on a regular basis and assist teachers in planning programs for specific learners, adjusting instruction to learning style differences and providing prescriptions

for behavior problems. The staff offers training in alternative teaching strategies and are capable of demonstrating those strategies and providing feedback to the teachers as they practice them in their classrooms. The resources of the university are available to the teachers and parents as are the services of a number of research and development centers in the area. A counselor has offered assistance to the principal and the staff in analyzing and improving their decision-making processes and communication styles, and teachers share in decisions about the purchase of instructional materials and can receive tailored individualized help as they prepare units in each of the curriculum areas.

There is a small preservice teacher training program connected with the school and university personnel and project staff work closely with the students in that program. Nearly all of the classrooms have the services of a part-time aide.

The community is multi-racial. Nearly three-quarters of the community members are classified by the Bureau of the Census as "minorities" with the largest number of persons so-classified being of Mexican-American origin. There are a few cases of extreme poverty in the community. It is composed largely of single family homes and in a large proportion of the families both parents work. The majority of parents aspire for their children to become upwardly mobile. Community members and teachers share a belief in the importance of the "basic skills" and most report that the school's greatest energy is devoted toward basic skills instruction. Most parents and teachers believe that the children are relatively happy in the school environment and that most of the teachers work very hard on behalf of the children. One indication of this is that this school has attained a highly steady attendance record with an average of less than four percent of the children absent on any given day. All in all then, there is a relatively unified, relatively stable community of upwardly-mobile persons, a relatively stable teacher population (all the teachers have taught more than

eight years and all but one have been at this school for more than five years), a principal who has also been with the school since its beginning (fourteen years), and relatively large resources for staff development.

THE METHOD OF THE STUDY

In this setting it is possible for the staff development staff working with the teachers and community members to generate a large variety of options for the teachers. Community members, aides, teachers and administrators can also engage together as participants in inservice programs of their choosing. The nearby university research and development centers, consultants, all can augment the staff, and many staff development activities can be individualized. It is possible, therefore, to see how the teachers in this school react to a wide variety of available options which they can choose from or organize for their purposes. The teacher population is relatively stable and their jobs are relatively secure. Through the participatory governance mechanism they can generate and carry out almost any staff development option that they can imagine.

During the course of the four years of the project a series of instruments have been used to observe both students and teacher behavior. An interaction analysis system SAM (Styles and Models) developed by Bruce Joyce and others was used to document the classroom transactions of teachers and students over the project's duration.[1] Robert Spaulding's CASES (Coping Analysis Schedule in Educational Settings) was used extensively to examine student behavior.[2] STARS (Spaulding Teacher Analysis

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[1] See Bruce R. Joyce. The Teacher Innovator System: Molar and Molecular Codes for Analyzing Teaching Styles and Models" Stanford 1977, and Michael D. McKibbin. The Application of Three Interaction Analysis Systems to Investigate Models of Teaching. Ed. D. Thesis, Teachers College, Columbia University, 1974.

[2] See Robert L. Spaulding "Control of Deviancy in the Classroom as a Consequence of Ego-Enhancing Behavior Management Techniques." Journal of Research and Development in Education, 1978.

Rating System) was used to categorize teacher styles.[3] In addition to these observation systems several interview and needs assessment techniques were carried out. There were five formal needs assessments. Gene Hall visited the project in 1976-77 and administered his Stages of Concern and Levels of Use instrument.[4] The data that were collected became part of the ongoing evaluation of the project and caused program modifications. There was also a major study of decision-making carried on at this site during the second year of the project.[5]

As part of the summative evaluation of the Project the teachers and administrators were asked to complete a Use Survey recalling the training activities they had participated in and the degree they had implemented the training in their classrooms. The data from the needs assessments that were carried out during the first three years did not seem to match what was being used in the classrooms. The staff decided to approach the problem differently by looking at personality as a determinant of reaction to training.

The method of study was to interview each of these teachers to explore their views of staff development and the options they wished to pursue, and to

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[3]Robert L. Spaulding, Spaulding Teacher Analysis Rating System. Institute of Research in Child Development, San Jose State University, San Jose, Ca.,1975.

[4]See Gene E. Hall. Analysis of the Rogers School Teacher Corps. October 1976 and May 1977, an unpublished paper, Research and Development Center for Teacher Education, University of Texas at Austin.

[5]Bruce R. Joyce, Greta Morine-Dershimer, Kathleen M. McNair. Thought and Action in the Classroom (Lansing, Mich.: Michigan State University, Institute for Research on Teaching, 1978).

analyze the content of those interviews in an attempt to understand how they think about themselves as professional persons and how they would use the environment for their personal growth. In addition, questions were asked about the teacher's concept of her/his role and the pressures which operate to constrain or expand the possibilities of that role. Thus, the offering of opportunities for staff development used as a stimulus in a projective methodology. The stimulus offered was opportunities for growth in a setting where it was possible to offer a vast number of options under the control of the clients themselves. Their reaction to those possibilities constitutes the content to be analyzed. The interviews each took approximately thirty minutes and were taped, and the teachers had the choice of when the interview was to be done including a release time option.

Interviews were conducted by a member of the staff who had been acquainted with the teachers and the setting for nearly four years and is in a position to organize the resources in the situation. This person's function has not been as director of the project, but rather as counselor to the teachers throughout its life. He offers training but also coordinates the training of others. He has had the opportunity to observe the teachers at work, and has on many occasions substituted for them, and thus has worked with their children, offered a variety of forms of direct personal and professional service to them.

The following three questions will guide this investigation.

1. When a specific training sequence is applied to experienced teachers, will the interactive teaching patterns change in desired directions?

2. How do teachers respond to various training options, and which do they chose to implement in their classrooms?

3. How do people whose personalities differ react to various training environments?

ANALYSIS OF TRAINING OPTIONS AND IMPLEMENTATION

The training program was designed to be a diverse, flexible program. The program seemed to be tailor-made for a group of teachers who had taught for an average of twelve years who would be looking for ways of expanding their teaching repertoire and designing a school environment that would meet the individual needs of their students.

There were five major emphases in the staff development program of the project. The teachers were offered a series of instructional strategies, known as Models of Teaching, that would enable them to offer a wide range of activities that were not readily present in their natural styles. Some of the offerings were in areas such as creativity, concept development and intergroup problem solving. The training program was designed so that teachers could observe demonstrations of teaching strategies, try those in a microteaching setting receiving positive and corrective feedback, and then try them in their own classrooms, again with supportive and corrective feedback.

The second type of training, Pupil Learning Styles, was to help teachers find ways of working with children who exhibited unacceptable or inappropriate behaviors, and help teachers reorganize their classes to assist pupils to develop improved social and academic skills. The work was done on a case-study basis and was always at the request of the teacher. The behavior descriptions and treatment suggestions were carried out in a supportive and confidential manner.

The third type of training was in Curriculum Development. Although curriculum development per se was not in the original proposal, it became apparent early in the project that exploring curriculum options, especially in the basic skill areas, was especially a high priority for the teachers.

The fourth focus was to increase and improve the amounts and quality of communications between parents and teachers. It was hoped that the parents and

teachers could be brought together as partners sharing the responsibility for educating the children. It was also hoped that the communication channels among teachers and between the principal and the teachers could be enhanced.

The fifth focus was Teacher Self Analysis. In this option teachers could ask questions about the teaching/learning processes of the classroom, and the observer/counselor would act "as an extra pair of eyes." Also within this option teachers could compare their methods of teaching a subject by video-taping lessons done in their classrooms and discussing their teaching with one another.

Staff Development Options Analysis

At the end of the project the South Bay teachers were asked to indicate what training activities they had attended, which of these activities they had used in their classroom, and which of these had changed classroom procedures. The results of the survey for the types of training available appear in Table 1. In total the South Bay participated in nearly one hundred different training activities, with more than 800 total teacher attendances. There were more than 400 feedback conferences on Pupil Learning Styles. The teachers indicated that they had used one or another models of teaching on more than 600 occasions, the mathematics training more than 150 times and the science activities nearly 100 times.

All of the training options except for three in Curriculum Development and one in Communication were originated by the training staff. The project staff tried to make it clear throughout the term of the project that they would try to respond to nearly any training request. Throughout the life of the project there were eleven types of requests beyond the regular offerings. Seven of these were individual requests in areas such as multicultural materials. There were four areas where several teachers made similar requests so training groups were formed.

Two of the options were in direct response to programs that one or two of the teachers had seen at conferences. The first was a two-day weekend workshop on moral development and values clarification. The days were well attended with more than fifteen teachers and fifty parents attending the meetings. The ratings on the session were quite high--as high as any training session that was given, but there was not one teacher who indicated that any of the activities demonstrated in the sessions were used in their classrooms. One of the teachers did indicate that although she had not used any specific activities, the sessions had influenced her ways of thinking.

Several teachers also sought to improve their Spanish skills. The training was offered through release time to six teachers by a qualified staff member. Of the six people who participated in the classes only two spent any appreciable amount of time doing their "home work." Eventually the staff member and the teachers decided to stop the sessions. It could be argued that the amount of time necessary to gain proficiency was far beyond the scope and hours available in this training program and beyond the energy levels of the teachers.

A criterion-referenced math program was initiated by the upper grade teachers. The teachers organized into a team teaching setting with the project providing time and consulting assistance to the teachers.

A popular and well-attended teacher-generated training option was in Science. There was a series of six three-hour training sessions provided along with all of the materials that went with the training. There were ten teachers who participated in the training. Six indicated that they had used the materials occasionally. Three indicated reasonably regular use.

TABLE 1

RESULTS OF THE IMPLEMENTATION OF TRAINING SURVEY

1. Curriculum and Teaching Strategies

	A[a]	B	C	D	E	F
MODELS OF TEACHING						
Concept Attainment	21	19	7	7	2	3
Synectics	21	18	8	2	2	4
Role Playing	17	10	5	0	0	3
Inquiry Training	14	9	5	2	2	1
Concept Formation	10	8	1	3	2	3
Simulation	5	4	1	1	0	0
Relaxation/Desensitization	16	14	2	2	1	0
Memorization	2	2	0	0	1	0
Glasser Classroom Meeting	3	2	0	1	0	1
MATHEMATICS						
DMP Math	6	7	3	1	0	3
Cuisenaire Rods	6	6	0	2	1	2
Workjobs	6	6	1	3	0	2
Number Systems	3	3	1	0	0	2
Math - A Way of Thinking	8	4	1	0	0	0
Comparative Lessons	1	1	0	0	0	0
SCIENCE						
Lawrence Hall HAP	10	10	5	4	2	0
CBIS	10	10	4	4	0	0
READING						
Ethna Reid	5	2	0	0	1	1
Teaching Reading as Decoding	5	4	1	0	0	1
Comparative Lessons	1	1	1	0	0	0
VALUES CLARIFICATION	13	13	0	0	0	0
PHYSICAL EDUCATION TRAINING	2	2	0	1	0	0

[a] A - Saw a Demonstration
B - Participated in Training
C - Tried Out Activities (1-3 Times)
D - Occasionally Use (4-8 Times)
E - Use on a Semi-regular Basis (9-15 Times)
F - Use Often (More Than 15 Times)

2. Pupil Learning Styles & Classroom Management

	Number of teachers
Received feedback	20
Had one or more case studies done	18
Used treatment on specific child	18
Used CASES to alter classroom management procedures	20
Learned CASES	5
Learned the treatment systems	4
Attended CASES classroom management workshops	3
Attended SJSU CASES course	2
Attended SJSU STARS course	1

3. Communication.

Attended family life/school life meetings	6
Attended improving parent conferences workshop	13
Attended faculty communications systems	15
Had individual conferences on improving communications	6
Spanish language training	5

4. Teacher Self Analysis

Did lesson comparing way of teaching with other teachers	3
Received feedback about own teaching	19
Asked questions about own teaching	17
Participated in establishing Research Bank	6

Delivery of Training

At the South Bay School there were a series of delivery options available to the teachers. The options can be divided into three categories--required, optional, (teachers chose to participate either during regular school hours or on paid extra time), and volunteer (wholly on their own time). Regular faculty meetings were the most frequent "required" elements. Approximately six faculty meetings were devoted to inservice activities each year. There were also three or four district-designated days of minimum work each year. Most of the subject matter to be discussed was usually predetermined and included areas such as multicultural education, language arts, reading, and mathematics sequences. These sessions usually were limited to an hour or an hour and a half in length.

Inservice activities of this sort met with varied amounts of success. The minimum days usually had designated curriculum and often were seen as "layons" by the teachers. As a result of the "resistance" not much was accomplished. There were some successful activities done at regular faculty meetings and a few of the minimum days such as using math manipulatives and learning number system concepts. The types of activities that could be done was somewhat prescribed by the time limit, so most of the activities were demonstrations of teaching strategies or curriculum materials.

Before and after school, lunch and break times were often the times used for the Pupil Learning Styles feedback and treatment conferences. These ten to fifteen minute conferences were used by the feedback specialists either on individual children or particular aspects of a teacher's classroom. The Parent Educator also used the half hour after school that the teachers' contract requires as a time to chat with teachers whose individual inservice plan was in communication. These conferences had variable success largely dependent on the energy level each teacher could bring to the meeting after a day of teaching.

The training options that produced the best results were the release time and the optional paid workdays. These training formats were used for several types of training. The extra workdays and release time options were used for the teaching strategies and science activities. These formats allow for the extended time that more sophisticated training takes and allows teachers to try out new strategies in settings where they can receive help and perfect their instructional moves.

Delivery Options Analysis

Chart 2 indicates the level of use of the training delivery options. As

could be expected, all teachers participated in the required training activities. All of the teachers also used the optional workdays. In fact, every paid extra work day available to each teacher was used. Eleven teachers used the release time option. Five teachers indicated that they would not use this option because they did not want to take time from their children. Twelve teachers participated in before or after school feedback activities. Seven teachers made special training requests for extended training in their classrooms. Five teachers spent time in training above their workdays or where they weren't being paid for it (volunteer). Four teachers participated in no training beyond the required or optional work days.

TABLE 2

DELIVERY OPTIONS

	Required		Optional			Volunteer	
Teacher Number	Regular Faculty Meeting	District Minimum Days	Release Time	Optional Paid Work Days	Before After School	In class Requests	Volunteered Time *
1	X	X	X	X			
2	X	X		X	X		
3	X	X		X	X	X	Min
4	X	X		X	X		
5	X	X		X			
6	X	X		X			
7	X	X		X			
8	X	X	X	X	X	X	X
9	X	X	X	X	X	X	
10	X	X		X			
11	X	X	X	X	X	X	
12	X	X	X	X			
13	X	X	X	X			
14	X	X	X	X	X		
15	X	X	X	X			
16	X	X		X	X	X	X
17	X	X	X	X	X	X	X
18	X	X		X	X		
19	X	X	X	X	X	X	Min
20	X	X	X	X	X		
21	X	X		X			

*Min = Minimal

Individual Training Analysis

The staff development counselor reviewed the training that the teachers had participated in over the four years. The summary of use of the training options was used to rate the teachers in terms of both the quantity and quality of their training. A point system was worked out and all teachers were rated based on the participation, training requests and use of training. The range was from a low of 13 to a high of 88. The mean is 36.1.

The staff development counselor used the training sessions interviews, personal conferences, and general discussions to arrive at an assessment of teachers and their receptivity to training. Some of the comments are provided below.

A teacher rated 88. She is the first teacher most likely to implement training. Wanted to be "perfect the first time something was tried." More than any other person exemplified the concept of expanding repertoire that is the project's principal objective.

A teacher rated 53. A teacher with a great deal of talent One of the biggest problems is that many teachers do not share the insights and skills they have. The failure to communicate her skills is a great loss for this school. The principal reason is that sharing isn't socially acceptable due to problems of being "a prophet in your own camp."

A teacher rated 47. Has participated in several training activities and is one of the top teachers in application of training. Uses new teaching strategies on a "semi-regular" basis. Tends to be bogged down in classroom trivia and controlled by the pressures of the day-to-day causing her to back away from new challenges. Is highly susceptible to peer pressures and will not risk being too "good" because she might be called an "apple polisher."

A teacher rated 46. Has shown more growth than any other teacher in the school. Has taken on new challenges and shown a great deal of leadership. Received much support from the other most self-actualizing teacher and a teacher she shares projects with. Her forthrightness and assertive behavior has put some teachers off. She didn't start participating until the last two years of the project after a teacher that she teamed with retired.

A teacher rated 35. Is very interested in new approaches to teaching and has been most interested in seeing them demonstrated, but does not put in the energy that will make the training activities part of her repertoire. Evidently enjoys training, but in terms of really taking hold and using it fully appears to have other priorities.

A teacher rated 34. Has been cooperative throughout the project. Has not applied the more complex kinds of training. However, has applied the science materials more than any other teacher.

A teacher rated 26. Started slow with the project. Was very leery about training options. Was militantly against "public teaching." Toward the end of the project became interested in "math-manipulatives" and attended workshops and used the training in her classroom.

A teacher rated 20. Has participated in every form of training offered in the two years she has been at the school. Much interested in learning the system for classifying children's classroom coping behavior. There is some question of her ability to implement treatment, but she works at it continuously.

A teacher rated 13. Participated in training less than any other teacher. Was the most closed in terms of collecting data. The only training she participated in was that that was mandatory.

IMPLEMENTATION OF A TRAINING OPTION: AN EXAMPLE

During the 1976-77 school year the teaching styles of the teachers at South Bay School were recorded using an observation system called SAM (Styles and Models) which is specifically designed to detect variations in teaching styles that result from the implementation of various models of teaching. The three major dimensions of the system are Structuring, Information Processing, and Feedback. Teaching Style is determined by the proportions of communications that fall in the categories within these dimensions.

The Teacher's Natural Style

In Table 3 the categories in the SAM system are presented, ranked by the frequency of their occurrence over all observations. Altogether, more than 22,200 communications were recorded or approximately 180 per teacher per observation.

TABLE 3

CATEGORIES RANKED BY FREQUENCY OF OCCURRENCE
OVER ALL OBSERVATIONS

Rank	Category, Name and Number		Frequency	Percent of total
1	level 1 info. proc.	(9)	13,001	58
2	Instruc. implement.	(7)	2,629	12
3	procedures - dir.	(5)	2,303	10
4	pos. feedback	(14)	1,227	6
5	corrective feedback	(17)	719	3
6	level 2 info. proc.	(10)	661	3
7	repeating	(18)	546	3
8	neutral feedback	(15)	281	1
9	non instruc. implement.	(8)	247	1
10	content dir.	(3)	220	1
11	digression	(19)	174	1
12	open-info. proc.	(12)	94	0.4
13	negative feedback	(16)	52	0.2
14	goals and standards - dir.	(1)	24	0.1
15.5	content - neg.	(4)	17	0.08
15.5	level 3 info. proc.	(11)	17	0.08
17	procedures - neg.	(6)	9	0.04
18	opinion-infor. Proc.	(13)	7	0.03
19	goals and standards - neg.	(2)	0	0
		TOTAL	22,228	

Information-Processing Communications

Level 1 information processing communications accounted for 58% of all the communications recorded. Level 1 questions and statements elicit or provide factual information. Teacher questions of this type do not require the learner to develop concepts, state them, make inferences or hypothesize.

A high concentration of Level 1 information processing moves characterizes

the "recitation style" of teaching in which the teacher asks lower order questions and questions to elicit knowledge of facts and the students responds in kind.[6]

Speaking of the school as a whole, the dominance of these moves is evidence that the recitation method is probably the dominant mode at South Bay.

Level 2 information processing moves occupied the sixth rank and represented about 1 in 30 of all information processing communications. Level 2 communications state a concept or elicit a statement of a concept from a student. They are characteristic of inductive and conceptual models of teaching. In studies of teachers carrying out concept-oriented and inductive models of teaching, it has been observed that about 200 out of the typical 500 communications which occur during a single hour of teaching are of the Level 2 type.[7] The percentage here is low enough to warrant the conclusion that concept-oriented approaches are not being used.

Level 3 information processing communications occupied the 16th rank, averaging not quite 1 for every thousand communications. Level 3 communications state or elicit hypotheses or theories or deal with causal explanations. The general absence of such communications indicates that complex information-processing models of teaching were not being used during the periods of observation.

Communications categorized as "open" information processing and those that were solicitations or statements of opinion occupied the 12th and 18th ranks respectively with a combined frequency of one hundred one, less than 5 per 1000 communications.

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[6] See James Hoetker and William Albrand. "The Persistence of the Recitation" in American Educational Research Journal, VI (March 1969) pp. 145-167.

[7] Bruce Joyce, Marsha Weil and Rhoada Wald. "Models of Teaching as a Paradigm for Teacher Education." Interchange, 4 (Winter 1973), pp. 47-60.

These two categories, together with Level 3 information processing, are characteristic of classrooms in which there is open discussion of issues and in which concept building activities are dominant. Their absence indicates that no personal or social models of teaching were being employed.[8]

It thus appears that the information processing communications in these classrooms were directed toward the mastery of specific facts rather than the development of concepts, speculation about issues or the expression and exploration of attitudes and feelings. The lack of opinion-oriented information processing communications also indicates that the content of the classrooms was affectively neutral and that expressions of personal opinion were seldom given or sought during the periods of observation.

Structuring Communications

Instructional implementation was the second most frequently used category with a total of 2629 (about 12% of the total number of communications). Implementation communications are those which arrange the events and participants during a classroom activity. Calling on students, indicating specific details of activities to be done next, and giving short instructional commands are examples of instructional implementation communications.

The third most common category was "directive procedures." These are communications in which the teacher or student determines procedures by identifying content to be explored and the means by which it is to be dealt with. Directive procedures (when not balanced by negotiated procedures) are characteristic of highly structured classrooms. Communications categorized as negotiating content ranked 15th with a frequency of only 17, communications negotiating procedures ranked 17th with a frequency of only 9 and those that dealt with negotiation

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[8]Bruce Joyce and Marsha Weil. Models of Teaching (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972, 2nd edition in press, 1980).

of goals and standards ranked last with a frequency of zero. Clearly, these classrooms were highly structured with relatively little negotiation of goals, standards, procedures or content occurring.

Together, directive procedures and instructional implementation account for almost 25% of all communications. Combined, Level 1 information processing, directive procedures and implementation communications account for 80% of all of the moves which occurred in the transactions during the period of observation. Thus, we have an overall picture of quite directive and straightforward teaching aimed at the mastery of facts. Students asked only 20 percent of all questions asked during the period of observation.

Feedback

Positive and corrective feedback were the fourth and fifth ranking categories respectively. Positive feedback is a reinforcement of a behavior and corrective feedback is a communication which accepts the student's statement but provides him/her with information about how it could be improved.

The occurrence of such a high proportion of corrective feedback also indicates a task oriented classroom in which mastery is highly valued.

The occurrence of either neutral feedback, with a total frequency of 28 for the 22,228 observations, or negative feedback, with a total frequency of only 39, is rare and indicates an atmosphere which is positive, if task oriented, where neutral and negative feedback occur less often than corrective feedback and corrective feedback occurs less often than positive feedback.

Effects of Models of Teaching Training

During the academic years 1977-78 we exposed teachers extensively to the Concept Attainment and Synectics teaching strategies and observed the teachers as they carried them out in their classrooms. Later in the year, observers visited the classrooms on a random basis, collecting samples of teacher and student interactive communications. All observations used the SAM instrument unmodified from 1976-77 so that the results could be compared with that year.

It is worth noting that many of the teachers did not like to be observed at the training and did not take advantage of many of the opportunities that were provided for feedback and further instruction and help in transferring the strategies into their classrooms.

Nonetheless, most of the teachers were observed in their early trials with both strategies and summary tables of the SAM results were constructed. A table reporting the results of the random classroom observations was also constructed as well as a table presenting the sum, frequencies and percentages for SAM categories under all three conditions over all teachers.

Inspection of these tables reveals that the teachers made very substantial changes in behavior (as did the children) while they were carrying out their first trials with both Concept Attainment and Synectics lessons; and they moved in the directions where are expected. (See Table 4.)

In Concept Attainment the Level 2 information processing was nearly 40% of the total and had the highest rank. This category is the most important in Concept Attainment dealing with manipulating data. The Level 3 information processing should be higher in Concept Attainment but is consistent with teachers in their early trials under-utilizing the analysis phase of the model. The Structuring Communications provide a striking contrast to natural style. There

TABLE 4

FREQUENCIES AND PERCENTAGES FOR SAM CATEGORIES
COMPARING NATURAL STYLES WITH STYLES DURING
CONCEPT ATTAINMENT AND SYNECTICS

		Natural Style 1976-77		Natural Style Apr.-May,1978		Concept Attainment		Synectics	
Cat. #	Cat. name	Frequency	Percent total	Fre-quency	Percent of total	Fre-quency	Percent of Total	Fre-quency	Percent of Total
1	Goals and standards - dir.	24	.1	6	.2	63	1.6	8	.6
2	Goals and standards - neg.	0	0	0	0	1	.0	0	0
3	Content - dir.	220	1.	79	2.1	66	1.7	30	2.3
4	Content - neg.	17	.08	41	1.1	0	0	0	0
5	Procedures - dir.	2,303	10.	292	7.7	191	5.0	54	4.2
6	Procedures - neg.	9	.04	1	.0	6	.2	0	0
7	Instructional implementation	2,629	12.	620	16.4	219	5.7	55	4.2
8	Non-instructional implementation	247	1.	60	1.6	21	.5	7	.5
9	Level 1 information-processing	13,001	58	2321	61.4	1231	31.9	217	16.7
10	Level 2 information-processing	661	3.	77	2.0	1520	39.4	653	50.1
11	Level 3 information-processing	17	.08	0	0	20	.5	58	4.3
12	Open information-processing	94	.4	5	.1	15	.4	4	.3
13	Opinion information-processing	7	.03	0	0	1	.0	5	.4
14	Positive feedback	1,227	6.	96	2.5	190	4.9	57	4.3
15	Neutral feedback	281	1.	44	1.2	22	.1	19	1.5
16	Negative feedback	52	.2	17	.5	17	.4	7	.5
17	Corrective feedback	719	3.	53	1.4	180	4.7	55	4.2
18	Repeating	546	3	63	1.6	75	1.9	68	5.2
19	Digression	174	1.	3	.1	16	.4	6	.5
	TOTAL	22,228		3778		3854		1303	

were 16 times more statements of goals in this model where establishing focus and set are important. There were half as many implementation moves probably because the teachers were following a conscious pattern and were teaching their students the patterns so implementation moves were not as necessary.

In the Synectics lessons distinct patterns of interaction were also found. Conceptual level information processing was even higher with more than half the communications in this category. The factual level communications were lower in this strategy since there is less need for a data base in this metaphoric strategy. The structuring and implementation frequencies were lower than Concept Attainment with less than twelve percent of the total communications falling in structuring categories.

The teachers were able to navigate the shifts in behavior required by specific models of teaching. Their behavior when using these models was markedly different from their established teaching styles, which they continued to use for many aspects of instruction. Later in the year the teacher's natural styles were again examined. Most of the observations were done during the teaching of reading (which is the subject matter more than fifty percent of the instructional time - 75% when arithmetic is added). There is little change in the teaching style during these observations (see Table 4). The patterns in structuring, information processing and feedback were generally the same as the earlier natural style examination. The data from these randomly collected samples of behavior show no evidence of either model of teaching.

The interesting thing about this is that this was true for all of the teachers. There appears to be no differentiation in the findings. Thus, we can conclude that following the training, the teachers for the most part were able to carry out the particular models of teaching in some recognizable form and were able to continue throughout further trials with those models, but there is no evidence of

effects beyond those trials.

The indication is very strong that specific training for transfer needs to be incorporated into the program if we are to expect any effects beyond those of their practice trials. We cannot be sure of this. The teachers may use these models regularly when they are not being observed. Informal communication indicates that some of them were using the models relatively extensively, but we have no hard data with which to back this up.

In addition, the teachers were generally resistant to observation and probably, therefore, also resistant to the process of transferring them to their regular classroom operations.

PSYCHOLOGICAL STATES AND STAFF DEVELOPMENT OPTIONS

The Psychological states of teachers were determined from an analysis of a series of interviews conducted with them over their views of teaching, the conditions within the school, and their recommendations for ways of improving the school, especially through the development and exercise of staff development options. In order to analyze the protocols from the interviews five categories were used, each one roughly representing one of Maslow's states.[9] The task was to place the teachers into one of the five following categories:

1. An orientation toward the satisfaction of basic physical needs. In contemporary societal terms, a person at this orientation is concerned primarily with economic security, the maintenance of a home, procurement of food, the management of a physical existence.

[9] Abraham Maslow. Toward a Psychology of Being (Princeton, N.J.: Van Nostrand Reinhold, 1962).

2. An orientation toward psychological safety. At this level an individual is seeking security in a predictable future. They are concerned with the psychological danger. They are attempting to build a social context which will maintain a belief that they are not threatened by their immediate social circumstance.
3. An orientation toward love and belonging. Persons in this state feel accepted, wanted and respected. They feel that they have achieved a texture of acceptance, they are relatively happy in their work, they may be content.
4. An orientation toward achievement. Persons at this level feel considerable self-esteem and that they are regarded as valuable and competent people. They are reaching out to improve their competence and feel confident that they can do so.
5. An orientation toward self-actualization. At this level a person is striving to expand their horizons, develop new possibilities for growth. They are reaching beyond their present conceptions of their roles and are becoming autonomous and seeking challenge. They feel that growth is integrated with their present role in the sense that they are secure enough in their present work and sense of personal security that they can challenge the present order of things in their personal lives. They are optimistic and see challenges as opportunities rather than threats.

Independently the clinical psychologist and leader of the inservice training staff analyzed the protocols into the five levels. The inter-rater agreement was very high. In every case they rated teachers in the same or adjacent categories. Looking from the point of view of options pursued and the point of view of the psychological state resulted in a very similar mining of the content.

As the counselor noted the interviews did not assess a great deal of personal information about the teachers. Nonetheless, clinical ratings were very similar to those of the individual who had considerable access to information about their lives. Although, as the counselor pointed out, that emotional turn, energy level, cogency, etc., can be affected by focusing on the work situation, all of those facets, which are the keys to determining the individual psychological orientation evidently were present in the protocols.

The counselor's comments over several of the protocols are provided below.

The teacher rated 5: "Sounds like she'll do something decisive to get those satisfactions--perhaps leave the system and find one that gives more support for self-actualization."

A teacher rated 4: "Seems to seek more sense of importance and recognition than many of these teachers and sounds more personally enlivened when talking about creative approaches. Appears to have curiosity about other areas of education. I have some question about how much energy she'll put into satisfying these needs."

A teacher rated 3: "Shows some interest in 4 and 5 areas but basically sounds adjusted to doing without recognition and creative expansion."

A teacher rated 3: "Sense of love and belonging seems to come from her students. May have trouble maintaining it outside of school."

A teacher rated 3: "Shows interest in level 5 kinds of pursuits but more inured to doing without them. Doesn't appear to need as much outside validation as teacher rated 5: In this system, if one doesn't push hard to get a sense of importance it probably won't happen. I see her settling back to a 3 because 4 and 5 aren't encouraged or exemplified in the system where she spends all her time."

A questionable 3: "Certainly dysphoric about relationships with people at work. May have trouble dealing with people generally."

The teacher rated 2: (An orientation in search of psychological safety.) "Such persistent focus on complaints and bad feelings rarely correlates with having good personal relationships and a sense of belonging."

A teacher rated 2: "Sounds personally isolated. It's possible that her personal safety and secruity are threatened by interpersonal contact. May be having more trouble than is clear with maintaining level 2."

A teacher rated 1: "May have difficulty keeping things together at this level. Associations sound very loose. Has great difficulty staying with a train of thought and giving answers that really respond to the question. Much time spent on self-justification which sounds defensive and quite insecure."

Altogether only three teachers were rated at levels 4 and 5. The norm of the school was level 3. The overall ratings of four persons were at the 2 and 1 level.

Most of the teachers in the school, thus, appear to be in a state of relative psychological safety and believe that they are accepted and respected at the level of their current performance in their job. They construe their job as the teaching of the basic skills and developing a pleasant environment for the children. They also believe they achieved the acquiesence of the community members and the parents. Only three persons appear to be reaching above that level, toward self actualization.

Psychological States and the Use of Training

The teachers were grouped into categories according to the analysis of psychological states and implementation scores were computed for each group. (See Table 5.)

TABLE 5

CORRELATION OF PSYCHOLOGICAL STATE RATING
AND TRAINING USE SCALE

	Teacher #	Psychological State Rating	$\bar{X}$	Training Score	$\bar{X}$
	17	5		88	
Group I	8	5	4.7	46	56.3
	4	4		35	
	20	3+		75	
	14	3+		53	
Group II	19	3+	3.5	44	50.7
	9	3+		31	
	12	3		52	
	3	3		47	
	13	3		34	
	11	3		31	
Group III	15	3	3.0	30	32.0
	18	3		29	
	2	3		26	
	1	3		21	
	6	3		18	
	7	3-		23	
	10	2		25	
Group IV	5	2	1.7	17	19.6
	16	1		20	
	21	1		13	

The mean implementation scores rose with the ratings of psycholgical state. All of the Group IV teachers (rated at levels one and two) were very low implementers of training. Group I and Group II teachers made use of their training at a rate two and one-half to three times greater than the Group IV teachers.

Most of the teachers at level three are pleased with the way they are teaching. They take additional training if there is a financial incentive rather than for professional advancement. They often selected training in areas where they are already skillful such as classroom management. They seldom reach

reach into uncharted areas such as new types of instruction.

Those at levels one or two are quite different in their receptivity to training. One protects her classroom fiercely. Requests for information are delayed with excuses or other tactics. On the other hand, one level one teacher is very open. She has volunteered her classroom for demonstration, is eager for training, and goes willingly to workshops without remuneration. She has limited ability to apply the training she recieves.

The psychologist pointed out the dilemma which faces program planners for persons of differeing psychological states. "I think it takes an individual at the four to five levels to make use of the kinds of consultation which this program offers. Those at levels one, two, and three are probably not going to put much energy into combining elements of different kinds or trying out new strategies." We theorize that for persons in the psychological states represented by most of these individuals, the rich, supportive, cooperative, multi-option program offered in this setting is seriously mismatched with their ability to take hold of and profit from it. Appraoches involve the exploration of new ways of teaching, richer ways of diagnosing and prescribing for the children, and greater options for involving community members and aides, are more suited for persons at the self-actualizing levels. Yet, as the counselor pointed out, "those in the four to five levels need peer and supervisory support and recognition in order to make their efforts worthwhile to them." The most chilling comment was made with respect to one of the four-five level teachers, that "sounds like she'll do something decisive to get these satisfactions . . .perhaps leave the system and find one that gives more support for self-actualization." In an environment dominated by level two and three psychological states it may be extremely difficult for persons reaching toward self-actualization to achieve

the social support necessary to fulfill themselves in these settings. This is a very uncomfortable line of thought to all of us, but one which has very special implications for staff development which depends on collective activity in many cases. If a school faculty is to reach toward new curricular options or new forms of school organization such as team teaching and other methods for differentiating staffing, and a great many of the individuals in the particular school setting are operating at a level which focuses their energies on the achievement of psychological safety, the prospects for the success of programs involving a considerable outreach of experience are probably relatively remote.

Certainly in this setting, most of the individuals opted not to create new alternatives for themselves. Although they were relatively comfortable in their setting and had a staff which could organize alternative possibilities, they selected from within the options which were offered and made relatively meager use of those, considering the number that were available.

The teacher who profited most from the program was one of the two teachers rated at level five by the clinical psychologist. Throughout the four years of the project she was interested in all of the innovations made available. She had been involved in developing innovative math and reading programs. When the project came, there was very little known about what she was doing except that she was doing something "different." She was seldom asked about her practices and was afraid of sanctions if she was regarded as "showing off." It was not until the project staff suggested a series of training sessions where some of the primary teachers compared their techniques that much was known about the approaches she used.

The other teacher that was rated at the highest level by the psychologist had a training score of forty-six. During the first two years this teacher did not participate in many training activities because of normative pressure. During the last two years of the project she began participating and made consi-

derable growth of it. One of the results of her attempts at professional growth was that a number of teachers began to view her suspiciously, trying to figure out what she was trying to "prove." She became threatening to some teachers during the last two years of the project. But she was so confident she either ignored the comments or "blasted the backbiters."

When the psychological ratings of individual teachers are examined in terms of the kinds of training they seem to request, the reflections by the psychologist appear to be correct. The teachers who were rated at the highest level seemed to be very much at ease with the more sophisticated kinds of training that required public teaching and occasionally careful examination of their own teaching philosophies. In fact they saw these as challenges to be met and the kinds of opportunities that make teaching more enjoyable. They were also the two people that really believed in professional growth as a responsibility of each teacher. As a result they threatened several others on the staff.

Those teachers rated "three-plus" showed interesting use of the training. All of them show potential for self-actualization but, the reward system and social system of the school militates against their movement upward, and most don't choose to fight it.

The training that the "level three" teachers used most consistently had as its substance concepts that were already being used in their curriculum. They chose options to help them do better what they were already doing. Whether it was science strategies, attaining concepts or increasing creativity, they were enhancing already existing curriculum.

The pressure to conformity was very evident in one of these teachers. Although in conversations with training counselors she indicated great interest in the more sophisticated training systems, she was filled with fears of looking "too good" to her colleagues and much of her training was done in her own classroom. She was, if you will, a "closet trainee."

With one exception, the teachers rated at levels one or two participated only in training that was required. The exception belies the general patterns of association between training and psychological state. This person requested more training in the last year of the project than any other classroom teacher. Her room was always open to the project staff. She listened to suggestions and she attended all training sessions. Her receptivity to training and her openness seems to be inconsistent with a low psychological state. She reminds us to take care with our categories. The world of personality is not a simple one. People grow, sometimes unexpectedly, and behave in unanticipated ways.

SUMMARY

One of the goals of the South Bay Project was to create an environment for teachers within which they could flourish and reach out to develop their best potential. A diverse, flexible program was provided. The program seemed tailormade for a group of experienced teachers. They could pick from the options available or generate their own options.

The natural styles of the teachers at South Bay School follow a "recitation" pattern having a basic skills orientation with most of the instruction in decoding and arithmetic. When the teachers were asked to demonstrate specific teaching strategies nearly all were able to reproduce the models, navigating the shifts required in the strategy. Both information processing and structuring interactive behaviors changed in the desired directions, i.e., more conceptual level thinking and goal setting and fewer implementation moves. Seventeen of the twenty-one teachers reported that they used some of the models on a regular or semi-regular basis. The teachers were able to grasp the skills and principles of selected models, but random samples of their teaching styles indicated that

they continued in their old styles when conducting the usual aspects of instruction.

When the conception of personality of Abraham Maslow is applied to the South Bay teachers, at least a partial explanation of the levels of implementation emerged. Maslow's conception emphasized the total personality and can be contrasted with narrow views of motivation. Motivation is often spoken of as if people were all alike ("If we could provide the 'right' incentives, everyone would respond.").

There were only a few teachers able to take full advantage of the complex training environment at South Bay, largely those teachers who were on the road to self-actualization. Those in a state of "self-survival" had been placed in what was, for them, a threatening environment, and they did not profit very much for it.

The norms of the school were dominated by people who feel comfortable as they are. A staff development program which is designed to help people reach beyond themselves is grindingly mismatched with people who are contented. Within those "level three" norms the most growing persons felt threatened and suspect. The training program was a productive outlet for these "self-actualizers," providing them with new worlds to conquer in teaching and the variety and challenge they thrive on.

This investigation, and our observations, are framework-generating rather than conclusive. We feel that specific training for transfer needs to be incorporated into the training program if we expect to have significant effects beyond the skills and principles level of any teaching strategy. This includes concerted efforts to support the teachers through colleagueship and coaching and demonstration. We are uncertain how personality should be taken into account in the development of inservice programs, but we are convinced that it is critically important, not only because of the obvious implications for each

individual's ability to profit from options, but because of the normative pressures generated by the collection of personalities in the school. South Bay was dominated by "Level Three" personalities and a very rich program was used in only a limited way, probably because it was designed for "self-actualizers."

Clearly, we need very careful investigation into personality and learning by teachers. For the present, we suggest two avenues for program development (and research).

The first is through the sensitive modulation of training to the psychological states of individuals and groups. David Hunt's principle of an "optimal mismatch" is our guide. That is, training environments should be oriented just above the level at which someone functions most comfortably. If the optimal mismatch is achieved the teacher can function adequately but is "pulled" toward greater development.

The second is the "social ecology" route, operating on the thesis that our social environment "pulls" our functioning level toward the norm of the group. Thus, if we build a "self actualizing" social climate, we are more likely to function at a higher level than if the social climate is dominated by a "survival" orientation.